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APPLICATION NO. 02	FILING DATE 9/95	ELDR	FIRST NAMED INVENTOR	B	ATTORNEY DOCKET NO.
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32M1/1202

EXAMINER

ART UNIT	PAPER NUMBER
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DATE MAILED:

12/02/97

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/554,902

Applicant(s)
Eldridge et al

Examiner
Christopher Goins

Group Art Unit
3206



- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 34 and 43-50 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 34 and 43-50 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Election/Restriction

1. Claims 1-33,35, and 36 withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected electrical connector structure. Election was made **without** traverse in Paper No. 10.

Claim Rejections - 35 USC § 112

2. Claims 34, and 43-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 34, adjusting the orientation of the support substrate does not planarize the tips of probe elements. The tips will remain in a single plane regardless of which angles they all lie. Further, a planarizing step seems to refer to something being cut.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Bargain et al in view of Tsuji et al. Regarding claims 34, 44-46, and 50 Bargain et al discloses a method of leveling elements on printed circuit card assembly comprising providing a support substrate (Fig. 1, element 14) having a top surface, a bottom surface, and a plurality of electrical components extending from the top surface, mounting the support substrate on a probe card having a top surface, the bottom surface of the support substrate opposing the top surface of the probe card, the support substrate having an orientation, the circuit card having an orientation, and adjusting (Fig. 1, element 66) the orientation of the support substrate without altering the orientation of the probe card, so as to level the electrical components. Bargain et al does not disclose the electrical component being a probe element having a tip at an end distal from the top surface of the support substrate. Tsuji et al discloses resilient probing elements (Fig. 1, element 18) having a tip at an end distal from the top surface of the support substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the circuit element of Bargain et al with the probing elements of Tsuji et al to test integrated circuits. Regarding claim 43, Bargain et al discloses the method of providing an interposer component having resilient contact structures on opposite surfaces thereof between the support substrate and the circuit card. With regard to claim 44, a recitation of the intended use of the article produced, i.e., a space transformer, is noted, however, in a claim drawn to a process of making, the intended use should result in a manipulative difference as compared to the prior art processes to predicate

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patentability. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

5. Claims 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bargain et al in view of Tsuji et al as applied to claims 34, 43-46 and 50 above, and further in view of Kwon et al. Bargain et al as modified above disclose the claimed invention except the joining of pre-fabricated tip structures to the tips of the probe elements. Kwon et al disclose a method of joining pre-fabricated tip structures to the tips of the probe elements on a sacrificial substrate (Fig. 4, element 11) and arranging the probe elements in groups on the support substrate. It would have been obvious to one of ordinary skill in the art at the time of the invention to join pre-fabricated tip structures on the support substrate of Bargain et al as modified above to verify the functionality of IC chips without any chemical bonding between the pad of the IC chip and the pad of the substrate.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Goins whose telephone number is (703) 305-6931.

cg

November 24, 1997



CARL E. HALL
PATENT EXAMINER
GROUP 320 - ART UNIT 326